

REMARKS

Reconsideration of the present application is requested. Claims 11, 12 and 16 have been withdrawn from consideration. Claims 1-10 and 13-15 are currently under examination. Claim 1 has been amended. Support for amended claim 1 may be found, for example, in paragraph **[0013]** of the substitute specification.

PRIORITY

The Examiner has acknowledged Applicant's claim for foreign priority and receipt of the necessary priority documents.

INFORMATION DISCLOSURE STATEMENT

The Examiner has considered the Information Disclosure Statements filed January 3 and January 31, 2006.

DRAWINGS

The Examiner has accepted the drawings.

PRIOR ART REJECTIONS

§ 102 Rejection – Ohki

The Examiner rejects claims 1-2 and 8-9 under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 5,886,408 ("*Ohki*"). This rejection is respectfully traversed.

FIG. 3 of *Ohki* discloses a multi-chip semiconductor device 1. In the semiconductor device 1, semiconductor chips 3 are mounted on a wiring circuit

board 4, which is further mounted on a baseboard 9. The baseboard 9 is fixed to a base member 6. The base member 6 has an opening 16 formed at the center, wherein the opening 16 is only slightly smaller than the wiring circuit board 4.

The semiconductor device 1 further includes a cap 5 having a plurality of radiating fins 12. The cap 5 is fixed to the base number 6, and covers the semiconductor chips 3. A rubber packing loop member 7 is arranged in a groove 14 of the cap 5. The packing loop member 7 hermetically seals cavity 13 when semiconductor device 1 is assembled.

The Examiner relies upon the base member 6 and the radiating fins 12 of *Ohki* to allegedly teach the "first and second cooling devices," of claim 1. Applicant disagrees with the Examiner's conclusion.

Firstly, *Ohki* fails to teach or fairly suggest that the base member 6 cools the semiconductor device 1 in any way. Therefore, the base member 6 does not constitute a "cooling device."

Moreover, claim 1 requires, "a semiconductor device, arranged between the first and the second cooling device." *Ohki* fails to teach or suggest such a feature. As shown in FIG. 2A (reproduced below for the Examiner's convenience), the base member 6 has an opening 16 which is clearly larger than semiconductor chips 3, and thus, the base member 6 does not extend beneath the semiconductor chips 3. Therefore, the semiconductor chips 3 are

not arranged between the base member 6 and the radiating fins 12, and the base member 6 does not constitute the first or second cooling device of claim 1.

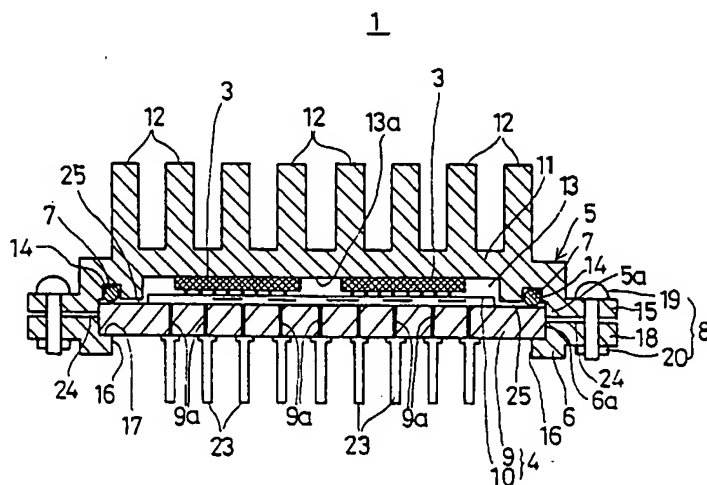
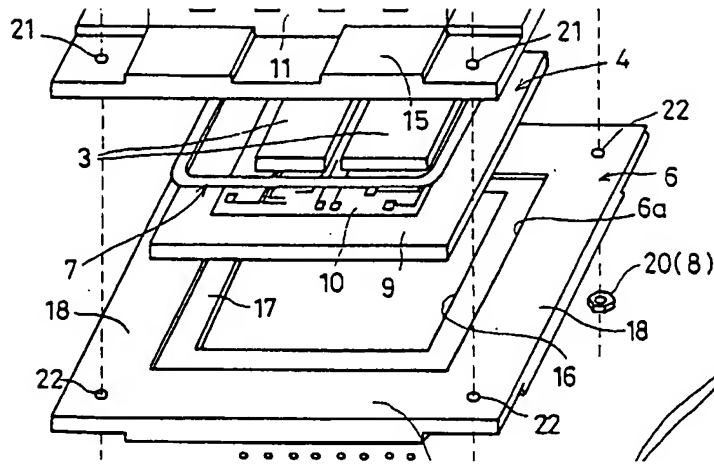


FIG. 2A of Ohki

Claim 1 further requires, *inter alia*, a space within an elastic annular element being encapsulated and "partially bounded by the first and second cooling devices."

Referring to FIG. 2A (above) in combination with the portion of FIG. 3 Ohki (reproduced below), the opening 16 in the base member 6 is clearly wider than the area within the perimeter of the packing loop member 7. Thus, the space within the packing loop member 7 is not "encapsulated and partially bounded," by the base member 6. For at least this additional reason, the base member 6 does not constitute the first or second cooling device of claim 1.



Relevant portion of FIG. 3 of *Ohki* (discussed above)

For at least the foregoing reasons, claim 1 is patentable over *Ohki*. Claims 2, 8 and 9 are patentable over *Ohki* at least by virtue of their dependency from claim 1.

§ 102 Rejection – Suzuki

The Examiner rejects claims 1-4, 10 and 13-14 under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent Application Publication No. 2001/0014029 (“*Suzuki*”). This rejection is respectfully traversed.

FIGS. 1-4 of *Suzuki* disclose an embodiment of a power inverter module in which semiconductor elements 102 are mounted on insulated substrates 103. The insulated substrates 103 are attached to a radiating plate 104, which is arranged on a heat sink 1. The radiating plate 104 includes radiating fins 105 arranged in parallel with a flowing direction of a cooling liquid flowing through a cooling channel 2 within the heat sink 1 for cooling the semiconductor power inverter module.

The Examiner relies upon the heat sink 1 and the radiating plate 104, 105 to allegedly teach the, "first and a second cooling device," respectively, of claim 1. Applicant disagrees with the Examiner's conclusion for the following reasons.

Only in combination with one another do the heat sink 1 and radiating plate 104, 105 of *Suzuki* perform a cooling function. Accordingly, only in combination with one another can the heat sink 1 and radiating plate 104, 105 arguably be considered a cooling device. Consequently, at most *Suzuki* discloses only a single cooling device, but not "a first and a second cooling device," as required by claim 1.

Moreover, even assuming *arguendo* that the heat sink 1 could be considered a first cooling device and the radiating plate 104, 105 could be considered a second cooling device (which Applicant does not admit for at least the reasons set forth above), the semiconductor elements 102, 103 are not arranged *between* the heat sink 1 and the radiating plate 104, 105. As is shown in FIG. 2 of *Suzuki* (reproduced below), the semiconductor elements 102, 103 are arranged on the radiating plate 104, which is further arranged on the heat sink 1. Thus, in contrast to claim 1, the semiconductor elements 102, 103 are arranged above, but not between, the radiating plate 104, 105 and the heat sink 1. For at least this additional reason, the heat sink 1 and the radiating plate 104, 105 do not constitute the first and second cooling devices of claim 1.

For at least the foregoing reasons, claim 1 is patentable over *Suzuki*. Claims 2-4, 10 and 13-14 are patentable over *Suzuki* at least by virtue of their dependency from claim 1.

Further Prior Art Rejections

Under 35 U.S.C. § 103(a), the Examiner further rejects claims 6 and 7 as unpatentable over *Suzuki*; and claims 5 and 15 as unpatentable over *Ohki* in view of *Suzuki*. As discussed above, each of *Ohki* and *Suzuki* are deficient with regard to claim 1. Accordingly, these rejections are respectfully traversed in that even assuming *arguendo* that *Suzuki* and/or *Ohki* could be modified and/or combined as suggested by the Examiner (which Applicant does not admit), *Suzuki* and *Ohki* are still deficient with regard to claim 1. Therefore, even as modified or combined, *Ohki* and/or *Suzuki* fail to render claims 5-7 and 15 obvious.

CONCLUSION

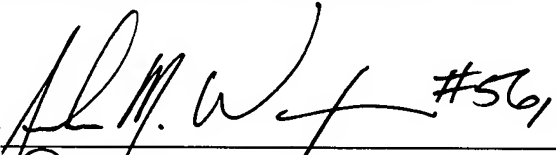
Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1-10 and 13-15 in connection with the present application is earnestly solicited.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Andrew M. Waxman, Reg. No. 56,007, at the number of the undersigned listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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